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Description

DRIP EDGE AND FASCIA SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority from U.S. provisional patent application no. 60/481,064 filed July 7, 2003.

FIELD OF THE INVENTION

[0002] The invention relates to roof drip edge and coverings for fascia.

DESCRIPTION OF THE RELATED ART

[0003] Many buildings include a plurality of upstanding walls covered by a roof.

The roof is typically downward sloping and covered by a plurality of shingles. The section of the wall near the roof is often covered by a fascia strip for protection and also to allow installation of a gutter to collect water and other debris that rolls off of the roof.

[0004] A disadvantage of such roof constructions is that water often seeps between the gutter inner wall and the fascia strip, causing rot and deterioration of the fascia strip. Moreover, in some types of construction, water can seep between the fascia and the side wall of the building, causing even more extensive damage. Water can also seep in between the roof shingles and the roof boards, causing rot and deterioration of these structural elements.

[0005] In an attempt to ameliorate these problems, drip edges are sometimes installed. A simple drip edge may be a planar sheet of plastic or metal inserted between the shingles and the roof which extends out over the edge of the roof, at the same downward slope as the roof. In this way, water and other debris from the roof is directed away from the building. Commonly, the water and other debris are directed into a gutter.

[0006] Heretofore, roof drip edges have been formed of aluminum or galvanized steel, and generally come in ten-foot lengths. Due to their length and material composition, such drip edges and fascia coverings are difficult to handle and to install and are also easily dented or bent. Such dented or bent edges when installed can be unattractive and can form undesirable gaps, which allow water to work its way back up under the roofing shingles. Roof drip edges of rigid plastic material have also been recently used in order to eliminate the denting and bending which occurs in metal edges. However, plastic is subject to buckling and puckering with changes in temperature, particularly where the material is vinyl.

[0007] There is a need for a means to install vinyl drip edge and fascia coverings that exactly match the color and material of commonly installed vinyl siding. There is also a need to enable covering pieces for fascia and drip edge to accommodate expansion and contraction of the material due to temperature changes.

SUMMARY OF THE INVENTION

[0008] A drip edge and fascia system according to the invention comprises a drip edge adapted to be mounted to a roof, a fascia cover mounting bracket

adapted to be mounted to an adjacent fascia board, and a fascia cover adapted to be mounted to the fascia cover mounting bracket. The mounting is such that the fascia cover is independently moveable relative to the fascia cover mounting bracket so that it will not buckle with thermal changes. Preferably, the drip edge or the fascia cover or both are formed of vinyl. But they can also be formed of metal, e.g., aluminum.

[0009] The drip edge typically includes a flexible mounting flange and a frontal piece, where the flexible mounting flange is adapted to mount to a roof and the frontal piece is rigid enough to resist deflection under force. Preferably, the frontal piece is colored. The drip edge can also have a face that covers a portion of the fascia cover when the drip edge and fascia system is mounted to a structure. Also, preferably, the thickness of each of the frontal piece and the mounting flange is in a range of 0.8 to 1.3 mm, and both parts can be but need not be the same thickness. The fascia cover is preferably mountable to the fascia cover mounting bracket by snap fit.

[0010] In another aspect of the invention, the drip edge and fascia system can include a drip edge mounting bracket adapted to be mounted to a roof, where the drip edge is mountable to the drip edge mounting bracket in a manner to be independently moveable relative to the drip edge mounting bracket. In this way, the drip edge will not buckle with thermal changes.

[0011] A further aspect of the invention is found in an improvement in a structure having a roof and a fascia board with a drip edge mounted to the roof, and a fascia cover for covering the fascia board. The improvement lies in a

fascia cover mounting bracket mounted to the fascia board, where the fascia cover is mounted to the fascia cover mounting bracket in a manner to be independently movable relative to the fascia cover mounting bracket. In this way, the fascia cover will not buckle with thermal changes.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] In the drawings:

[0013] Fig. 1 is a cross sectional view of a drip edge and fascia system according to the invention.

[0014] Fig. 2 is a view showing how adjacent drip edge pieces are mounted end to end.

[0015] Fig. 3 is a view similar to Fig. 2 showing how adjacent fascia cover pieces are mounted end to end.

[0016] Fig. 4 is a cross sectional view of a drip edge mounting bracket according to the invention.

[0017] Fig. 5 is a cross sectional view of a fascia mounting bracket according to the invention.

[0018] Fig. 6 is a cross sectional view of a drip edge according to the invention.

[0019] Fig. 7 is a cross sectional view of a fascia cover according to the invention.

[0020] Fig. 8 is a cross sectional view of a second embodiment of a drip edge and fascia system according to the invention.

[0021] Fig. 9 is a view showing how adjacent drip edge pieces of Fig. 8 are mounted end to end.

[0022] Fig. 10 is a view similar to Fig. 9 showing how adjacent fascia cover pieces of the second embodiment are mounted end to end.

[0023] Fig. 11 is a cross sectional view of the drip edge mounting bracket of Fig. 8 according to the invention.

[0024] Fig. 12 is a cross sectional view of the fascia mounting bracket of Fig. 8 according to the invention.

[0025] Fig. 13 is a cross sectional view of the drip edge of Fig. 8 according to the invention.

[0026] Fig. 14 is a cross sectional view of the fascia cover of Fig. 8 according to the invention.

[0027] Fig. 15 is a third embodiment of a fascia covering system according to the invention.

[0028] Fig. 16 is a fourth embodiment of a drip edge and fascia system according to the invention.

[0029] Fig. 17 is view showing how adjacent drip edge pieces of Fig. 16 are mounted.

[0030] Fig. 18 is a cross sectional view of the drip edge of Fig. 16 according to the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0031] Referring to Fig. 1, a first embodiment of a drip edge and fascia system 10 according to the invention is shown as being used with a building such as a home where roof sheathing 12 meets a vertical fascia board 14. Thus, the drip edge and fascia system 10 enables use of vinyl drip edge and fascia coverings, consistent in color and texture with vinyl siding that may be used on the home.

[0032] The drip edge and fascia system 10 comprises four separate components: a drip edge mounting bracket 16, a fascia cover mounting bracket 18, a drip edge 20, and a fascia cover 22. The drip edge mounting bracket 16 is best illustrated in Figs. 1, 2, and 4. The drip edge mounting bracket 16 can be molded of the same color and texture material as vinyl siding used on the home. However, because the drip edge mounting bracket 16 will not be seen when installed, it can be made of any material sufficiently rigid to support and retain the drip edge 20. Such materials may include a rigid polymer such as ABS, aluminum, and galvanized metal or other material. It is important only that the drip edge mounting bracket 16 be capable of supporting and retaining the drip edge 20, and be corrosion resistant.

[0033] The drip edge mounting bracket 16 comprises a mounting flange 24 adapted to rest flat against the roof sheathing 12. The mounting flange 24 extends from a support channel 26. The support channel 26 comprises an upper arm 28, a bight section 30, and a lower arm 32. Preferably, the mounting flange 24 extends from the bight section 30 at the same angle as the pitch of the roof sheathing 12. The junction of the mounting flange 24 and the support channel 26 can be fixed, or it can be a flexible hinge to

enable the drip edge mounting bracket 16 to be mounted to any roof, regardless of pitch. It will be understood that shingles (not shown) will be mounted to the roof over the sheathing 12 and the mounting flange 24.

[0034] One of the arms 28, 32 (here the lower arm 32) has a shoulder 34, which together with the bight section 30, defines a recess 35. Depending from the bight section 30 generally at a right angle to the support channel 26 is a guide channel 36, defined by a rearward arm 38 and a facing arm 40. The arms 38, 40 can be the same length as shown, or they can be different lengths to better accommodate receiving a fascia cover 22 as explained below. At least one end of the drip edge mounting bracket 16 has the support channel 26 and the guide channel 36 ending before the edge 37 of the mounting flange 24 and the rearward arm 38. Thus, an adjacent piece of drip edge mounting bracket 16 can overlap to inhibit migration of moisture between the drip edge mounting bracket and the roof sheathing 12 or fascia 14. If desired, a sealant can be interposed between overlapped portions.

[0035] The fascia cover mounting bracket 18 is best shown in Figs. 1, 3, and 5. The fascia cover mounting bracket 18 can be molded of the same color and texture material as a vinyl siding used on the home. However, because the fascia cover mounting bracket 18 will not be seen when installed, it can be made of any material sufficiently rigid to support and retain the fascia cover 22. Such materials may include a rigid polymer such as ABS, aluminum, and galvanized metal or other material. It is important only that the fascia cover mounting bracket 18 be capable of

supporting and retaining the fascia cover 22, and be corrosion resistant.

[0036] The fascia cover mounting bracket 18 comprises a mounting flange 42 extending at a right angle from a support flange 44. The mounting flange 42 is adapted to be nailed to the front of the fascia board 12. Depending from the support flange 44 is a support channel 46, defined by first and second arms 48, 50 spaced from each other. At a terminal end of each arm 48, 50, is an inwardly facing shoulder 52 which can be barbed as shown, or straight.

[0037] Both the drip edge mounting bracket 16 and the fascia cover mounting bracket 18 are preferably formed by extrusion. Because of the importance of inhibiting the intrusion of water from the roof to the sheathing beneath it or to the fascia, adjacent pieces of drip edge mounting bracket and the fascia cover mounting bracket are preferably overlapped.

[0038] The drip edge 20 is best illustrated in Figs. 1, 2, and 6. The drip edge 20 comprises an upper flange 54 with a facing piece 56 depending therefrom. A mounting tab 58 extends rearwardly from the upper flange 54. The mounting tab 58 has a locking shoulder 60 at its distal edge. Looking now at Figs. 1 and 2, it will be apparent that the drip edge 20 is mounted to the drip edge mounting bracket 16 by inserting the mounting tab 58 into the support channel 26 until the locking shoulder 60 snaps into the recess 35 behind the shoulder 34. The length of the mounting tab 58 is shorter than the length of the upper flange at one end to form a notch 62 at the end. Thus, adjacent pieces of drip edge can overlap when necessary. When the mounting tab 58 is secured in the support channel 26, the shoulder 34

prevents easy removal because the locking shoulder 60 abuts the shoulder 34. However, the mounting tab 58 remains slidable within the support channel 26. It is this slidability that enables the drip edge 20 to expand and contract with temperature changes, but without buckling.

[0039] The fascia cover 22 is best illustrated in Figs. 1, 3, and 7. The fascia cover 22 comprises a front fascia cover plate 64 and a bottom fascia cover plate 66. The bottom fascia cover plate 66 extends rearwardly from a lower edge 68 of the front fascia cover plate 64. A tab 70 extends upwardly from the bottom fascia cover plate 66, and is spaced from the front fascia cover plate 64. A head 72 on the distal edge of the tab 70 can provide a T-shape, or it can be barbed. The head 72 is received within the support channel 46 in snap fit relation until it bears against the inwardly facing shoulder 52 to be retained therein. Simultaneously, an upper edge 74 of the front fascia cover plate 64 is received within the guide channel 36. It will be apparent that the fascia cover 22 will be slidable relative to the fascia cover mounting bracket 18 and the drip edge mounting bracket 16 so that it will not buckle with changes in temperature. The length of the tab 70 is shorter than the length of the front fascia cover plate 64 at one end to form a notch 74 at the end. Thus, adjacent pieces of the fascia cover 22 can overlap when necessary.

[0040] Preferably the drip edge 20 and the fascia cover 22 will be formed of the same material as the siding on the building to which it is installed. For example, the drip edge 20 and the fascia cover 22 can be formed of extruded vinyl with matching color. Similarly, they can be formed of

aluminum if the house were to be sided with aluminum. When mounted, as shown in Fig. 1, it will be apparent that water coming off the roof is directed away from the fascia 14 by the drip edge 20. Moreover, any water that migrates down the drip edge facing piece 56 or even through the support channel 26 will be directed to the fascia cover 22, thereafter to be shed without contacting the fascia 14.

[0041] A second embodiment of a drip edge and fascia system 100 according to the invention is shown in Figs. 8-13. As in the first embodiment, the drip edge and fascia system 100 comprises four separate components, a drip edge mounting bracket 102, a fascia cover mounting bracket 104, a drip edge 106, and a fascia cover 108. The drip edge mounting bracket 102 is best illustrated in Figs. 8, 9, and 11. The drip edge mounting bracket 102 is preferably formed of the same color and texture material as siding used on the home, e.g., vinyl. However, because the drip edge mounting bracket 102 will not be seen when installed, it can be made of any material sufficiently rigid to support and retain the drip edge 106. Such materials may include a rigid polymer such as ABS, aluminum, and galvanized metal or other material. It is important only that the drip edge mounting bracket 102 be capable of supporting and retaining the drip edge 106, and be corrosion resistant.

[0042] The drip edge mounting bracket 102 comprises a mounting flange 110 adapted to rest flat against the roof sheathing 12. The mounting flange 110 extends from a support channel 112. The support channel 112 comprises an upper arm 114, a bight section 116, and a lower arm 118.

Preferably, the mounting flange 110 extends from the bight section 116 at the same angle as the pitch of the roof sheathing 12. The junction of the mounting flange 110 and the support channel 112 can be fixed, or it can be a flexible hinge to enable the drip edge mounting bracket 102 to be mounted to any roof, regardless of pitch.

[0043] The upper arm 114 has a shoulder 120 that, together with the bight section 30 defines a recess 122 in the support channel 112, effectively making the support channel L-shaped in cross section. Depending from the intersection of the bight section 30 and the lower arm 118, at a right angle to the support channel 112, is a guide flange 124. An outwardly extending flare 126 is located at the distal edge of the guide flange 124.

[0044] The fascia cover mounting bracket 104 is best shown in Figs. 8, 10, and 12. The fascia cover mounting bracket 104 is preferably formed of the same color and texture material as a siding used on the building, e.g., vinyl. However, because the fascia cover mounting bracket 104 will not be seen when installed, it can be made of any material sufficiently rigid to support and retain the fascia cover 108. Such materials may include a rigid polymer such as ABS, aluminum, and galvanized metal or other material. It is important only that the fascia cover mounting bracket 104 be capable of supporting and retaining the fascia cover 108, and be corrosion resistant

[0045] The fascia cover mounting bracket 104 comprises a mounting flange 130 extending at a right angle from a support flange 132. The mounting flange 130 is adapted to be nailed to the front of the fascia board 12. Depending

from the support flange 132 is a support channel 134, defined by first and second arms 136, 138 spaced from each other. Here the second arm 138 is coplanar with the mounting flange 130 although it need not be. At a terminal end of each arm 136, 138, is an inwardly facing shoulder 140 which can be barbed as shown, or straight.

[0046] The drip edge 106 is best illustrated in Figs. 8, 9 and 14. The drip edge 106 comprises an upper flange 142, L-shaped in cross section, with an upwardly extending facing piece 144 and rearwardly extending arm 146. Depending from a distal edge of the rearwardly extending arm 146 is a cover face 148, with a rearward flare 150 at the distal edge of the cover face 148. A mounting tab 152 extends rearwardly from the upwardly extending facing piece 144, generally parallel to and spaced above the rearwardly extending arm 146. The mounting tab 152 has a locking shoulder 154 at its distal edge.

[0047] Looking now at Figs. 8 and 9, it will be apparent that the drip edge 106 is mounted to the drip edge mounting bracket 102 by inserting the mounting tab 152 into the support channel 112 until the locking shoulder 154 snaps into the recess 35 behind the shoulder 120. Note, however, that whereas the locking shoulder 154 effectively inhibits removal of the mounting tab 152 from the support channel 112, there is nothing to inhibit a longitudinal sliding motion of the mounting tab within the support channel. Indeed, it is this slidability that prevents the drip edge 106 from buckling due to temperature changes. The length of the mounting tab 152 is shorter than the length of the upwardly extending facing piece 144 at the ends thereof

to form a notch 156 at each end. Thus, adjacent pieces of drip edge 106 can overlap when necessary.

[0048] The fascia cover 108 is best illustrated in Figs. 8, 10, and 13. The fascia cover 108 comprises a front fascia cover plate 160 and a bottom fascia cover plate 162. The bottom fascia cover plate 162 extends rearwardly from a lower edge 164 of the front fascia cover plate 160. A tab 166 extends upwardly from the bottom fascia cover plate 162, and is spaced from the front fascia cover plate 160. A head 168 on the distal edge of the tab 166 can provide a T-shape in cross section, or it can be barbed. The head 168 is received within the support channel 134 in snap fit relation until it bears against the inwardly facing shoulders 140 to be retained therein. Simultaneously, as shown in Fig. 8, an upper edge 170 of the front fascia cover plate 160 is received between the fascia board 14 and the guide flange 124. It will be apparent that the fascia cover 108 will be slidable relative to the fascia cover mounting bracket 104 and the drip edge mounting bracket 102 so that it will not buckle with changes in temperature. The length of the tab 166 is shorter than the length of the front fascia cover plate 108 at one end to form a notch 172 at the end. Thus, adjacent pieces of the fascia cover 108 can overlap when necessary.

[0049] A third embodiment of a fascia cover mounting bracket 180 and the fascia cover 182 is shown in Fig. 15. Here the fascia cover mounting bracket 180 is similar to the fascia mounting cover bracket 104 in Fig. 12, except that instead of a support channel defined by a pair of arms, there is only a

single arm 184 coplanar with the mounting flange 186. A terminal flange 188 extends rearwardly from a distal edge of the arm 184. The terminal flange 188 and the support flange 132 define a horizontal support channel 190. The fascia cover 182 is similar to the fascia cover 108 in Fig. 13, except that instead of a head on the tab 166, there is a forwardly extending mounting flange 192 extending from the distal edge of the tab 166. When the mounting flange 192 is received within the horizontal support channel 190, the terminal flange 188 is simultaneously received within the channel defined between the mounting flange 192 and support flange 132.

[0050] A fourth embodiment of a drip edge and fascia system 200 according to the invention is shown in Figs. 16-18. Certain elements of this fourth embodiment are identical to those described above in earlier embodiments, and they will bear like numerals to those earlier described elements. More particularly, the fascia cover mounting bracket 104 and the fascia cover 108, together with their associated components, are unchanged in this fourth embodiment. The distinctive difference in the fourth embodiment lies in a single piece drip edge 202.

[0051] Looking first at Fig. 18, it can be seen that the drip edge 202 comprises a flexible mounting flange 204 and a more rigid frontal piece 206. The frontal piece includes a U-shaped edge 208 having a bight portion 210, an upper arm 212, and a lower arm 214. The upper arm 212 has a terminal edge 216 from which the mounting flange 204 extends. Preferably, the mounting flange 204 and the frontal piece 206 are formed by co-extruding

PVC with differing formulations for each. The mounting flange 204 will have a formulation that, for example, includes softeners to enable the flange to be flexible. Color is immaterial to the mounting flange 204 so the formulation will likely include no coloration. On the other hand, the frontal piece 206 is more rigid than the mounting flange 204 and, because it will be visible, must have coloration that preferably matches or complements the coloring of the siding of the structure to which it is to be mounted. Thickness of both the mounting flange 204 and the frontal piece 206 will preferably be in a range of 0.8 to 1.3 mm. Ideally, both components will have the same thickness, although such is not critical to the invention.

[0052] Extending at a preferable 90(angle from the lower arm 214 is a face 218 from whose lower edge extends a flange 220 at an angle from the plane of the face. Looking now at Fig. 16, it can be seen that when installed, the mounting flange 204 is nailed to the roof sheathing 12 with the U-shaped edge 208 extending away from the roof edge and the face 218 depending generally parallel to the fascia board 14. The front fascia cover plate 160 of the fascia cover 108 has an upper portion thereof that extends between the fascia 14 and the face 218. More specifically, the upper edge 170 is received between the fascia board 14 and the face 218.

[0053] The ability of the fourth embodiment design to facilitate overlapping mounting of adjacent drip edge pieces 202a and 202b is best shown in Fig. 17. There is some flexibility in the U-shaped edges 208a and 208b (regardless of the rigidity of the frontal pieces 202a and 202b) by virtue of the structure. Thus, one drip edge piece 202b can overlap an adjacent

drip edge piece 202a by having the U-shaped edges 208a and 208b nest in each other, while adjacent components such as the mounting flanges 204a and 204b, faces 218a and 218b, and flanges 220a and 220b lay one over the other. Preferably, the overlap will be about $\frac{1}{2}$ inch to accommodate thermal expansion and contraction without losing overlap. Moreover, because the fascia cover 108 is not attached to the drip edge 202, it can move independently at a different thermal expansion or contraction rate and thereby minimize buckling.

[0054] While the invention has been specifically described in connection with certain specific embodiments thereof, it is to be understood that this is by way of illustration and not of limitation, and the scope of the appended claims should be construed as broadly as the prior art will permit.